Sb-Au MINERALIZATION IN NIŽNÁ BOCA (NÍZKE TATRY MTS., SLOVAKIA)

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Sb-Au hydrothermal mineralization is one of the most abundant ones in the Nízke Tatry Mts. (CHOVAN *et al.*, 1996). Occurrences of Sb-Au mineralization in Nižná Boca are located in the Zach mine field, to the south from the village. Veins and veinlets are located in the Ďumbier type Variscan I-type granitoid and rarely in metamorphic rocks, not intersecting Mesozoic autochthonous sedimentary sequences. Veins typically have a N–S strike, dipping 50ş E with a supposed length up to 1 km. Sb-Au ore was exploited till the end of 19th century.

Based on a detailed mineralogical-paragenetical research (only from old mine dump material), we can distinguish the following paragenetic associations:

1) quartz – arsenopyrite, pyrite
2) quartz – gold (?)
3) quartz –dolomite – stibnite
4) quartz – ferroan dolomite – pyrite – sphalerite – galenite, boulangerite, zinckenite, bournonite, berthierite – gold
5) quartz – carbonates – tetrahedrite, chalcopyrite
6) barite – carbonates – hematite, pyrite

Sb-Au veins consist predominantly of quartz and carbonates that occur always in position of the younger mineral. Arsenopyrite is the oldest sulphide at the deposit, Au content varies from 0.5 to 1150 ppm. Gold occurs mostly in milky and grey-white quartz, scarcely in carbonates, boulangerite, pyrite and arsenopyrite. It forms irregular grains of typical yellow colour. The biggest gold grain was 2 mm in size, but the majority of grains is less than 0.04 mm in size. Au content varies from 79–90.5 wt%, Ag 9–18 wt%, concentration of other analysed elements (Bi, Cu, Fe, Te, Sb, Hg) do not exceed 0.8 wt. %. Stibnite was found to form veins and veinlets up to 4 cm in quartz and carbonates, needle shaped or acicular crystals are rare. Pb-Sb sulphosalts are abundant, they are represented mainly by zinckenite and boulangerite that form needle shaped and acicular crystals up to 0.5 mm in milky and grey-white quartz and carbonates. Secondary minerals are represented by malachite (?), goethite, jarosite, rozenite, and stibiconite.

Gold was also found in the adjacent Boca Creek (max. 112 grains per panned sample). Its morphological and chemical features were presented by SMIRNOV (1999).

References

CHOVAN, M., SLAVKAY, M. & MICHÁLEK, J. (1996). Geol. Carp., 47: 371–382.
SMIRNOV, A. (1999). Mineralia Slovaca, 31: 318.